Remarks

The Applicants have amended independent Claims 1 and 24 for the sake of clarity.

The Applicants have added a part of the subject matter of Claim 3 into Claim 4 and similarly added part of the subject matter of Claim 25 into Claim 26. Claims 3 and 25, respectively, have accordingly been cancelled. Also, the dependency of Claims 4 and 26 has been changed to depend from independent Claims 1 and 24, respectively.

The Applicants have amended Claims 22 and 31 to depend from Claims 1 and 24, respectively.

Finally, Claims 5, 6, 27 and 28 have been cancelled.

Entry of the above amendments and cancellations into the official file is respectfully requested.

Claims 1, 3-6 and 19-23 stand rejected under 35 USC §103 over the combination of JP '252 with JP '846. The Applicants respectfully submit that the rejection is now moot with respect to cancelled Claims 3 and 5. The Applicants respectfully submit that one skilled in the art would not make the combination, but in any event, the combination would still fail to disclose, teach or suggest the subject matter of those claims.

The rejection helpfully identifies specific structure and locations in JP '846 with respect to structure that corresponds to that of Claim 1. However, there is a portion of the rejection that cites that there is structure that corresponds to either of the first and second FRP layers being formed as lower strength FRP layer, and the lower strength FRP layer forms a crushable structure that absorbs impact to a pedestrian during a collision. However, there is no reference to a location in JP '846 for such a structure. The Applicants respectfully submit that there is a reason for this lack of identification of location of JP '846 for that claimed feature. That is

because there is no such disclosure in JP '846. There is no mention of pedestrians, no mention of absorbing impacts of any type, much less during a collision. Further, there is no disclosure concerning differences in strength between first and second FRP layers.

Instead, JP '846 is directed to a classic sandwich type FRP panel which comprises two FRP surface skins and a core material. This structure is disclosed for the purpose of obtaining the highest rigidity possible with high endurance, low weight and excellent insulation characteristics. For example, paragraph [0002] of JP '846 refers to the panels as being lightweight and high in rigidity. Paragraph [0003] refers to acquiring high rigidity and improving rigidity. Paragraph [0004] refers to a core material in known FRP panels. However, there are problems with such panels because, as disclosed in paragraph [0006] of JP '846, there is still a lack of high rigidity and insulation properties. That is solved by JP '846 in arranging at least one FRP sheet on both sides of the core material. This results in high rigidity and light weight as referred to in paragraphs [0013] and [0014]. Further references to improving rigidity may be found in paragraphs [0019], [0027] and [0037], for example. However, there is simply nothing with respect to disclosure of either of the Applicants' first and second FRP layers formed as a lower strength FRP layer and a lower strength FRP forms a crushable structure that absorbs impact to a pedestrian during a collision. Hence, the Applicants disagree with the characterization of any such disclosure in JP '846.

The rejection does, however, frankly acknowledge that JP '846 fails to disclose that differences in rigidity or differences in strength or both are provided by one or two or more differences selected from the group consisting of a difference in amount of reinforcing fibers, difference of property of reinforcing fibers and a difference in orientation of reinforcing fibers, wherein the FRP panel is an FRP solid plate formed integrally with the first FRP layer and the

second FRP layer and the difference in strength is provided by high breaking elongation layer on the lower strength FRP layer. The Applicants agree. Thus, the rejection turns to JP '252 to cure that deficiency.

JP '252 is also directed to panels having high rigidity. However, JP '252 discloses a high local rigidity which is directed to solving the problem of separation of the core foam material from localized portions of the FRP skin. Thus, JP 252 adds a separate layer 5 to suppress separation from the skin to improve local rigidity. However, there are several problems with JP '252. First, there is utterly no disclosure in JP '252 with respect to forming a crushable structure that absorbs impacts to a pedestrian during a collision. In fact, JP '252 leads those skilled in the art in the opposite direction. In particular, JP '252 is directed to increasing localized rigidity as opposed to decreasing localized rigidity to form a crushable structure. Thus, the Applicants respectfully submit that if one skilled in the art is attempting to create an FRP panel that has a crushable structure that absorbs impacts to a pedestrian during a collision, one skilled in the art would have no incentive to look to JP '252 (as well as JP '846). That is because neither disclosure mentions the problem of forming a crushable structure that absorbs impact to the pedestrian during collision, much less any possible solution. That is simply because they did not recognize the problem.

In any event, JP '252 leads those skilled in the art away from the subject matter of Claim 1 because it increases localized rigidity as opposed to decreasing rigidity in a selective way to form a crushable structure that absorbs impacts to a pedestrian during a collision. Therefore, even if one skilled in the art were to look to JP '252 (as well as JP '846), those skilled in the art would be led away from what the Applicants have achieved. On this basis alone, the Applicants respectfully submit that the rejection must fail.

However, there is still another problem in that the structure of JP '252 does not constitute either the first or the second FRP layers being formed as a lower strength FRP layer, wherein the differences in strength are provided by one or two or more differences selected from the group consisting of a difference in amount of reinforcing fibers and a difference in property of reinforcing fibers and a difference in orientation of reinforcing fibers. Instead, JP '252 takes a completely different approach and actually laminates another different layer to one of the FRP layers. There is no disclosure whatsoever concerning providing FRP layers of different strengths. In each instance in JP '252, there is no disclosure with respect to the FRP layers 3 and 4 having differences in strength. To the extent that any difference in strength is provided to the overall panel, that is done by the addition of a supplemental layer, not by providing differences in strength between the two FRP layers. It inherently follows that JP '252 does not provide differences that can be one or two or more selected from the group consisting of a difference in the amount of reinforcing fibers, a difference in property of reinforcing fibers and a difference in orientation of the reinforcing fibers.

Thus, the Applicants respectfully submit that even if one skilled in the art were to combine JP '252 with JP '846 (despite a lack of any motivation, teachings or suggestion to do so), the result would not be differences in strength in the FRP layers, but improved localized rigidity by the addition of a completely different layer that is not an FRP layer as described by JP '252. As a consequence, the Applicants respectfully submit that the rejection must fail.

Finally, with respect to this rejection, the rejection itself notes that it would be obvious to one skilled in the art to use a different fiber with a different rigidity as taught by JP '252 on the product of JP '846 to change the strength of the panel and prevent fracturing of the panel when in a collision. Assuming *arguendo* that it would be obvious to change the strength of the panel,

that would be a change in increasing the strength of a panel not decreasing the strength of a panel to provide for a crushable structure. Thus, the combination is completely inapplicable to Claims 1, 4 and 19-23. Withdrawal of the rejection is respectfully requested.

Claims 15-17 stand rejected under 35 USC §103 over the further combination of Fujimoto to JP '846 and JP '252. However, the Applicants respectfully submit that Fujimoto fails to cure the deficiencies set forth above with respect to the combination of JP '846 and JP '252. Withdrawal of the rejection is respectfully requested.

Claims 24-28, 31 and 32 stand rejected under 35 USC §103 over the combination of JP '856 with JP '846. The Applicants respectfully submit that the rejection is now moot with respect to cancelled Claims 25, 27 and 28.

JP '846 is inapplicable to independent Claim 24 for the same reasons set forth with respect to the inapplicability of JP '846 to Claim 1. JP '846 is also inapplicable for the reasons frankly acknowledged in the rejection, wherein the difference in strength is provided by introducing a discontinuous part of a reinforcing fiber substrate, which is a trigger point for breakage, on at least one reinforcing fiber substrate layer of the lower strength FRP layer, wherein a difference in planar rigidity against external force is provided between said first and second FRP layers by providing a difference in hardness between a surface and a back surface of said core material. Hence, the rejection turns to JP '856 to cure those deficiencies.

Unlike JP '252, JP '856 acknowledges the possibility of collisions and the use of a "crease bead" with respect to traditional metal hoods/bonnets. The JP '856 solution is to provide at least one layer of an FRP material having two or more layers, wherein fibers are cut beforehand along a line of a cutting plane as disclosed in paragraph [0010], for example. This is said to be the same as the Applicants' introduction of a discontinuous part of a reinforcing fiber

substrate in the rejection. However, there are still problems with JP '856 and its hypothetical combination with JP '846. JP '856 discloses that, by introducing a cut line into the fiber layer, rigidity of the cut line part is reduced, and by making the introduced cut line part function as a trigger, the whole of the hood is deformed into bent configuration. However, since a breakage prevention layer is provided to suppress separation, JP '856 teaches that it is not preferred that the parts on both sides of the fiber cut line part are separated and broken into two parts.

Because it is necessary to locate the discontinuous fiber layer and the breakage prevention layer in a single plate to ensure necessary rigidity and strength, the thickness of the plate is increased and this increases the difficulty of moldability, etc.

In sharp contrast, the Applicants' discontinuous part is structured so that the hood is not bent, but separated or positively broken into two or more parts along the discontinuous part. If breakage occurs at the discontinuous part by stress concentration due to collision, because cycles of stress concentration → breakage sequentially occur successively in FRP layers adjacent the discontinuous part, as a result, the FRP plate is separated or broken and the ability to protect a pedestrian is increased.

Since among two FRP plates the above-described part weak in strength is provided in one FRP plate, the respective FRP plates can be made thin. Therefore, moldability is simultaneously improved. Hence, the subject matter of Claims 24-28, 31 and 32 is still quite different from the combination of '856 and '846.

Additionally, Claim 24 recites that there are differences in strength in either of the first and second FRP layers that are caused by a difference in the amount of reinforcing fibers, a difference in property of reinforcing properties and a difference in orientation of reinforcing fibers beyond introduction of the discontinuous part of a reinforcing fiber substrate. The specific

problem with the combination of JP '856 with JP '846 then becomes the fact that neither reference discloses, teaches or suggests that additionally claimed feature. There is no disclosure in JP '846 or JP '856 with respect to differences in the amount of reinforcing fibers. There is no discussion in JP '846 or JP '856 with respect to differences brought about by the properties of the reinforcing fibers. There is no disclosure in either of JP '846 or JP '856 with respect to orientation of the reinforcing fibers.

The combination relies solely on differences in strength provided by introducing a discontinuous part of a reinforcing fiber substrate, not at least one of the other three differences in strength. As a consequence, the Applicants respectfully submit that even if one skilled in the art were to hypothetically combine JP '856 with JP '846, the structure would still be different because there would be no higher strength FRP layer and lower strength FRP layer, wherein the differences in strength are provided by one or two or more differences selected from the group consisting of a difference in amount of reinforcing fibers, a difference in property of reinforcing fibers and a difference in orientation of reinforcing fibers. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,

T. Daniel Christenbury
Reg. No. 31,750
Attorney for Applicants

TDC/vp
(215) 656-3381